

7



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,682	01/02/2001	Chishio Hosokawa	HEIW:003	8198

7590 05/22/2003
PARKHURST & WENDEL, L.L.P.
1421 Prince Street, Suite 210
Alexandria, VA 22314-2805

EXAMINER

BERCK, KENNETH A

ART UNIT PAPER NUMBER

2879

DATE MAILED: 05/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,682

Applicant(s)

CHISHIO HOSOKAWA

Examiner

Ken A Berck

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2879

DETAILED ACTION

Amendment A, filed Feb 21, 2003, has been received.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 8 and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bojarczuk, Jr et al. (US 5898185) in view of Jabbour et al. (US 6525466).

Regarding claims 1, 18-20 and 22, Bojarczuk discloses (fig 1) an organic electroluminescence element with an anode, a semiconductor layer comprising a non-monocrystal material, an organic light-emitting medium and a cathode with the second electrode electrically connected to an edge section of the semiconductor layer.

Bojarczuk fails to clearly point out the organic light-emitting medium being located between a first electrode and the semiconductor layer made of conductive conjugate polymer.

Jabbour discloses (fig 1) the organic light-emitting medium being located between a first electrode and the semiconductor layer made of conductive conjugate polymer with an auxiliary second electrode in order to achieve enhanced external quantum efficiency and injected electrons densities.

Hence it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the EL element of Bojarczuk with the organic light-emitting medium being located between a first electrode and the semiconductor layer made of conductive conjugate polymer with an auxiliary second electrode in order to achieve enhanced external quantum efficiency and injected electrons densities, as taught by Jabbour.

Regarding claim 2, Bojarczuk discloses (fig 1) the second electrode is electrically connected to an extended section extending in a horizontal direction from the edge section of the semiconductor layer.

Regarding claim 3, Bojarczuk discloses the second electrode is electrically connected to two or more edge sections of the semiconductor layer, as well as electrically connected to the entire device.

Regarding claim 4, Bojarczuk discloses (fig 8) the second electrode is made in patterns of lattices.

Regarding claim 21, Bojarczuk discloses the organic light-emitting medium is not found between the second electrode and the semiconductor layer.

Regarding claim 23, Bojarczuk discloses the second electrode is located outside an area common to both the first electrode and the organic light-emitting medium.

Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bojarczuk, Jr et al. (US 5898185) in view of Shimoda et al. (US 6563527).

Bojarczuk discloses all of the above claim limitations but fails to clearly point out the non-monocrystal material consisting of ZnS, an oxide of Si or amorphous carbon.

Shimoda discloses using the non-monocrystal material consisting of ZnS and an oxide of Si in order that the light emissive state changes very little with temperature.

Hence it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the EL element of Bojarczuk with the non-monocrystal material consisting of ZnS in order that the light emissive state changes very little with temperature, as taught by Shimoda and since it would be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use.

Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bojarczuk, Jr et al. (US 5898185) in view of Domen et al. (US 6555403).

Bojarczuk discloses all of the above claim limitations but fails to clearly point out the most appropriate range for the semiconductor layer band gap, thickness, resistance, electric charge concentration and light transmittance.

Domen discloses the semiconductor layer having a band gap of at least 2.7 eV, a thickness of 1 to 700 nm, a resistance within the range of 1×10^{-3} to 1×10^4 , an electric charge concentration within the range of 1×10^{12} to 1×10^{20} and a light transmittance of at least 10%.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select the most appropriate range for a selected application, since discovering the optimum or workable ranges involves only routine skill in the art.

Response to Arguments

Art Unit: 2879

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

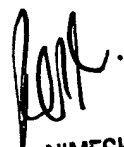
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken A Berck whose telephone number is (703)305-7984. The examiner can normally be reached on Mon-Fri 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703)305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7382 for regular communications and (703)308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

kab 
May 19, 2003


NIMESHKUMAR D. PATEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800